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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,258	08/01/2000	Marc Hoffman	ADI-005XX	7200

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EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2124

3

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/630,258

Applicant(s)

HOFFMAN ET AL.

Examiner

Chat C. Do

Art Unit

2124

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2000 and 14 May 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

In the abstract page, the number "225033" must be removed.

Appropriate correction is required.

2. Claims 1, 5, and 8 are objected to because of the following informalities: the term "FFT" must be written in full as "Fast Fourier Transform". Appropriate correction is required.

Claim Objections

3. Claim 2 is objected to because of the following informalities: the term "x" in line 6 must be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 2, the limitation "replacing said plurality of first data ... in said second memory location" is unclear whether the data of the first memory location is replaced with the data of the second memory location or the data of the third memory location.

For examination purposes, the examiner considers the limitation as “replacing said plurality of first data ... in a third memory location”. In addition, the limitation “said second memory location” in line 5 lacks an antecedence basis. For examination purposes, the examiner considers this limitation as “a second memory location” in line 5.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakai et al. (U.S. 6,115,728).

Re claim 1, Nakai et al. disclose a method for computing an FFT in Figure 1, the method comprising:

- (a) receiving a plurality of first data values, first data values having a total of N-data points (Figure 4 x(0)-x(31));
- (b) storing in a first memory each of plurality of first data values (RAM#0 and col. 8 lines 30-32);
- (c) providing in a second memory a plurality of twiddle factors stored in sequential locations in a bit reversed order (104 in Figure 1 and Figure 8);

(d) reading R input butterfly data values of plurality of first data values where each of R butterfly data values are separated by N/R first data value in plurality of first data value ($N = 32$, $R = 4$, and separated by 8 different groups of input data);

(e) performing a radix R butterfly calculation on R butterfly input data (Figure 4 stage 0);

(f) providing R butterfly output data values (output of stage 0);

(g) sequentially storing R butterfly output data values in a third memory (RAM#1 and col. 8 lines 30-32); and

(h) performing steps (c) to (g) $N/R \times 2$ times (compute other groups 1-7 in Figure 4).

Re claim 2, Nakai et al. further disclose in Figure 6 the steps of replacing plurality of first data values in first memory (SYMBOL INPUT RAM) with plurality of data in second memory location (SYMBOL OUTPUT RAM); and repeating steps (c) – (h) a total of $\log_r(n)$ times (Figure 32 wherein $r = 2$ and $n = 8$; therefore $\log_2(8) = 3$ stages to be performed and Figure 8).

Re claim 3, Nakai et al. further disclose in Figure 5 R is equal to 2 (middle box; radix-2 butterfly operation).

Re claim 4, Nakai et al. further disclose in Figure 5 R is equal to 4 (top box; radix-4 butterfly operation).

Re claim 5, it is an apparatus claim of claim 1. Thus, claim 5 is also rejected under the same rationale in the rejection of rejected claim 1.

Re claim 6, it is an apparatus claim of claim 3. Thus, claim 6 is also rejected under the same rationale in the rejection of rejected claim 3.

Re claim 7, it is an apparatus claim of claim 4. Thus, claim 7 is also rejected under the same rationale in the rejection of rejected claim 4.

Re claim 8, it is a DSP apparatus claim of claim 1. Thus, claim 8 is also rejected under the same rationale in the rejection of rejected claim 1.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 5,694,347 to Ireland discloses a digital signal processing system.
- b. U.S. Patent No. 6,263,356 to Kozaki et al. disclose a Fast Fourier Transform calculating apparatus and Fast Fourier Transform calculating method.
- c. U.S. Patent No. 6,098,088 to He et al. disclose a real time pipeline Fast Fourier Transform processors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Art Unit: 2124

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chat C. Do
Examiner
Art Unit 2124

March 31, 2003

Kakali Chaki
KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100